

Research on Commuting Expenditures for the Supplemental Poverty Measure (SPM)

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In December 2010, the Census Bureau will release a series of topic-based updates that outline current and future research and actions related to the development of the Supplemental Poverty Measure (SPM). This document provides an update on research and other relevant branch activities related to the SPM.

Current Measurement of Commuting Expenses by the Census Bureau

The SPM adjusts poverty thresholds for geographic difference based solely on differences in housing costs, in large measure because of the current limitations in data related to other costs. As stated in *Observations from Interagency Technical Working Group*, “ideally, if more data become available, it would be attractive to move toward a price index that covers all items in the threshold.”

In *Experimental Poverty Measures: 1999* (U.S. Census Bureau 2001), transportation-related expenses are currently defined under the broad category of “Other Work-Related Expenses.” These expenses are further sub-categorized under “Mileage expenses,” which include the number of miles typically driven to and from work in a typical week, and “Other expenses,” which include any other expenses incurred while getting to and from work in a typical week, such as bus fares or parking fees. (Other expenses may also include non-commuting related expenses such as tools, uniforms, etc.) The 1995 National Academy of Sciences (NAS) Panel on Poverty and Family Assistance proposed subtracting a flat amount from a family’s resources for ‘other’ work-related expenses, with an annual inflation adjustment. Following the panel’s recommendations, the flat amount, in this report, represented 85 percent of the median amount spent on other work-related expenses, as reported by respondents in the 1996 SIPP panel.

There are currently no geographic delimiters used with the “Other Work-Related Expenses” contribution to the SPM. Therefore, the JTWMSB recommends that commuting expenses be delineated by geography for a more accurate calculation of the SPM thresholds.

Federal Notice

A *Federal Register* notice (Vol. 75, No. 101, p. 29513) was issued on May 26, 2010, soliciting public comments regarding specific methods and data sources in developing the SPM. The JTWMSB will research and provide feedback to those comments specifically related to commuting expenditures.

The broad categories that public comments addressed included:

- Transportation costs associated with different geographical areas, including urban/rural, cross-metropolitan, and transit-rich/non-transit-rich areas.
- Commuting expenses for mass transit/personal vehicle usage, as well as access to public transportation, and/or vehicle availability.

First Steps and Research into Improving the SPM

This section outlines steps for further research aimed at developing a more refined measure of commuting expenses across geographic areas.

- 1) *Region* – Commuting expenses will be calculated separately for each of the four geographic regions defined by the U.S. Census Bureau: Northeast, Midwest, South, and West.
- 2) *Size of Metro Area* – Another approach to delineating by geography is to group metro areas across the country by population size, independent of region. Further research would be needed to determine the population thresholds across categories, but one possibility for categorization would be: 5,000,000+, 1-5M, 500,000-1M, 100,000-500,000, and under 100,000. This approach captures the considerable variation in the cost of commuting across geographic areas of different sizes.
- 3) *Combining Regions and Size of Metro Area* – Categorizing the size of metro areas within each region provides a more refined estimate of average commuting costs, as it accounts for commuting expenditure patterns linked to both the size and geographic location of places. Using size of metro within region allows metro areas to be grouped together, which could be advantageous with datasets that have smaller sample sizes.
- 4) *Metropolitan Statistical Area* – The next step towards improving accuracy in the SPM would be to average commuting expenses for each of the metropolitan statistical areas in the U.S. Using this method, if data are available, provides a more local and, therefore, more accurate index for commuting expenses in the SPM.
- 5) *Population Density and Average Age of Housing Stock* – Lastly, population density and average age of housing stock can be key indicators/proxies for commuting congestion, housing costs, public transportation availability, and transportation type. Including these two variables in the refinement of commuting expenses will create a more precise measure of how local factors affect commuting expenses, thereby creating a more accurate SPM. Population density can be readily calculated at almost any geography and can be obtained annually from the ACS. The availability of the average age of housing stock will vary depending on the geographical scale and dataset.

Surveys and Commuting Expenses

A number of U.S. Government-sponsored surveys contain questions related to commuting and/or work-related expenses. This section describes the availability and geographic scope of commuting key variables across surveys, as well as relevant limitations associated with each.

American Community Survey (ACS)

The ACS is a national survey that provides data for relatively small geographic areas and includes questions related to means of transportation to work, travel time to work, and time of departure for work. Among other limitations, the ACS does not include specific questions related to commuting expenses, nor does it include a multi-modal commuting question (i.e., utilizing the bus and subway each as partial segments in the daily journey to work).

Survey of Income and Program Participation (SIPP)

SIPP is a continuous series of national panels, with a sample size ranging from approximately 14,000 to 36,700 households. The Work Schedule topical module provides data directly related to commuting expenses regarding mode of transportation, mileage driven to and from work, and parking or mass transit fees. SIPP variables provide the most direct measure of commuting expenses. A relatively small sample size presents significant limitations, as the lowest level of available geography is at the state level, with a dichotomous metro/non-metro indicator. Distance traveled to work is not explicitly accounted for, although respondents are asked to indicate the total miles driven as part of the work commute. Also, there is no explicit question about transit fare, although it is accounted for in the last question about “other work related commuting expenses.”

National Household Travel Survey (NHTS)

The NHTS is a Federal Highway Administration survey that consists of a 24-hour travel diary from over 60,000 interviewed households. The most recent NHTS was in 2009, and an enhanced version of this data, with proper weighting, has not been released yet but is expected in the next several months. In 2001, there were about 26,000 households in the national sample; a further 43,000 households were included in add-on samples collected in Baltimore, Des Moines, Honolulu, Hawaii, four counties in Kentucky, Lancaster, PA, New York State, , Texas, and Wisconsin. Data collected include means of transportation, trip purpose (although these data consists of all trips taken – not just the work trip), travel time, time/day of week, number of people in vehicle, driver characteristics, and vehicle attributes. Limitations: The NHTS does not contain information that explicitly addresses cost of travel and the lowest level of geography is the MSA.

Current Population Survey (CPS)

The CPS is a monthly survey of about 50,000 households conducted by the Census Bureau for the Bureau of Labor Statistics. This survey contains questions regarding labor force characteristics of the U.S. population, including employment, unemployment, earnings, hours of work, demographic characteristics, occupation, industry, and class of worker. Among other limitations, this survey does not include explicit questions regarding commuting or its associated costs and the sample size is relatively small in comparison to the ACS.

Other Research Ideas and Considerations

- The ACS does not explicitly ask questions about commuter costs or expenses. Perhaps the SIPP survey questions can be modified to explicitly question respondents about expenses related to traveling to work as a dry run for possible future ACS questions. This would provide better sample estimates for the SPM as well.
- Potential further research:
 - Commuting measures: Distance measure vs. travel time measure vs. both
 - How NHTS geography compares to SIPP geography
 - Block-level transit access indicator
 - Components of overall commuting costs
 - Local congestion and its impact on commuting costs
 - Local gas prices and their effect on miles driven, means of transportation, etc.